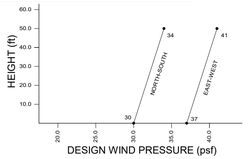
## WIND DESIGN CRITERIA

**GLOBAL WIND CRITERIA**

| | | |
|---|---|---|
| RISK CATEGORY: | III | |
| EXPOSURE: | C | |
| ULTIMATE DESIGN WIND SPEED $V_{ult}$: | 127 mph | (STRENGTH LEVEL) |
| NOMINAL DESIGN WIND SPEED $V_{asd}$: | 98 mph | (SERVICE LEVEL) |
| ANALYSIS PROCEDURE: DIRECTIONAL PROCEDURE | | |
| INTERNAL PRESSURE COEFFICIENT ($GC_{pi}$): | +0.18/-0.18 | |

MAIN WIND FORCE RESISTING SYSTEM (LRFD):




## SEISMIC DESIGN CRITERIA

**GLOBAL SEISMIC CRITERIA**

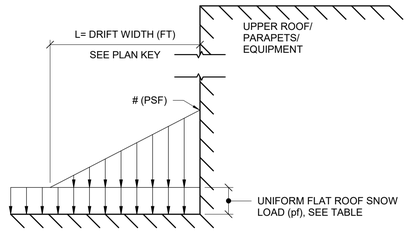
| | |
|---|---|
| RISK CATEGORY: | III |
| IMPORTANCE FACTOR, Ie: | 1.25 |
| SOIL SITE CLASS: | D |
| SEISMIC DESIGN CATEGORY: | B |
| MAPPED SPECTRAL RESPONSE ACCELERATIONS: | $S_S$ = 0.260g<br>$S_1$ = 0.059g |
| DESIGN RESPONSE ACCELERATIONS: | $S_{DS}$ = 0.276g<br>$S_{D1}$ = 0.093g |
| ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE | |
| LATERAL FORCE RESISTING SYSTEM: | - STRUCTURAL STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC |
| SYSTEM DESIGN PARAMETERS: | RESPONSE MODIFICATION FACTOR, R = 3.0<br>OVERSTRENGTH FACTOR, $\Omega_o$ = 3.0<br>DEFLECTION AMP. FACTOR, $C_D$ = 3.0<br>SEISMIC RESPONSE COEFFICIENT $C_S$ = 0.110 |

## SNOW DESIGN CRITERIA

| | |
|---|---|
| IMPORTANCE FACTOR, Is: | 1.10 |
| RISK CATEGORY: | III |
| GROUND SNOW LOAD, pg: | 40 psf |
| EXPOSURE FACTOR, Ce: | 0.9 |
| THERMAL FACTOR, Ct: | 1.0 |
| FLAT ROOF SNOW LOAD, pf: | 30 PSF |

SNOW DRIFT LOAD, pd:

| DRIFT CASE | DRIFT WIDTH, L (ft) | DRIFT LOAD (psf) |
|---|---|---|
| 1 | 6.8 | 131 |




## DESIGN LIVE LOADS

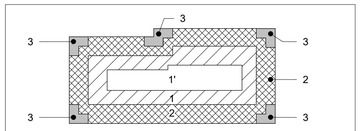
| OCCUPANCY | DESIGN LOAD |
|---|---|
| MOE BUILDING GROUND FLOOR | 250 PSF |
| CAR WASH GROUND FLOOR | 250 PSF |
| OFFICES | 100 PSF |
| ROOF | 20 PSF OR<br>300 LB CONCENTRATED |

NOTE: IN ADDITION TO THE OCCUPANCY LIVE LOADS ABOVE:
- ALL LEVELS OF FRAMING ABOVE OCCUPIABLE SPACE HAVE BEEN DESIGNED FOR 15 PSF LIVE LOAD FOR UTILITY SUPPORT.

## ROOF RAINFALL DATA

| | |
|---|---|
| 15 MINUTE RAINFALL INTENSITY: | i = 6.59 in./h |
| 60 MINUTE RAINFALL INTENSITY: | i = 2.97 in./h |

## WIND DESIGN CRITERIA - COMPONENTS & CLADDING (LRFD)

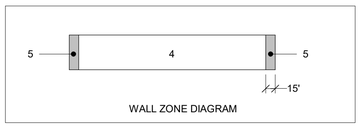



ROOF ZONE DIAGRAM

ROOF PRESSURES (PSF)

| $A_e$ (ft.$^2$) | ZONE 1' | ZONE 1 | ZONE 2 | ZONE 3 |
|---|---|---|---|---|
| 10 | +18.2/-40.9 | +18.2/-71.3 | +18.2/-94.0 | +18.2/-128.1 |
| 100 | +16.0/-40.9 | +16.0/-55.6 | +16.0/-73.9 | +16.0/-88.0 |
| 500 | +16.0/-27.7 | +16.0/-44.7 | +16.0/-67.9 | +16.0/-55.9 |
| >1000 | +16.0/-22.0 | +16.0/-44.7 | +16.0/-59.9 | +16.0/-55.9 |
| FM GLOBAL* | 1-75 | 1-135 | 1-165 | 1-225 |

*NOTE: THE VALUES INDICATED FOR "FM GLOBAL" REPRESENT THE MINIMUM WIND UPLIFT RATING NEEDED FOR FM GLOBAL APPROVED ROOFING PRODUCTS. THESE VALUES HAVE BEEN CALCULATED IN ACCORDANCE WITH FM GLOBAL DESIGN SHEET 1-28 AND INCLUDE A FACTOR OF SAFETY OF 2.




WALL ZONE DIAGRAM

WALL PRESSURES (PSF)

| $A_e$ (ft.$^2$) | ZONE 4 | ZONE 5 |
|---|---|---|
| 10 | +40.9/-44.3 | +40.9/-54.6 |
| 50 | +36.7/-40.1 | +36.7/-46.2 |
| 200 | +33.1/-36.5 | +33.1/-38.9 |
| >500 | +30.7/-34.1 | +30.7/-34.1 |

**DESIGNED BY:**

STV INCORPORATED
280 TRUMBULL STREET, 14TH FL
HARTFORD, CT 06103

David Breza
2025.02.21
09:49:51-05'00'

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| 1 | 7/14/25 | UPDATED DESIGN LOADS |

**ADDENDUM NO. 1**

DESIGNER/DRAFTER: J. RUECKEL CHECKED BY: A. CERINO

SIGNATURE/ BLOCK:


stv
280 TRUMBULL STREET, 14th FLOOR
HARTFORD, CT 06103
(203) 375-0521


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0301-0509
PROJECT DESCRIPTION: IMPROVEMENTS TO THE STAMFORD MAINTENANCE OF EQUIPMENT (MOE) FACILITY
TOWN(S): STAMFORD, CT
DRAWING TITLE: STRUCTURAL LOADING

DRAWING NO. **STR-104**
SHEET NO. 11.04.A1